

THE LITTLE TERN PROTECTION SCHEME 1986.

A REPORT

by; Ian J. Herbert.

October 1986.

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IRISH WILDBIRD CONSERVANCY

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I. INTRODUCTION

The 1984 Tern Survey (Whilde 1984) highlighted the need for conservation of the little tern on the east coast of Ireland in view of declining numbers and contraction into fewer colonies. Examination of the data indicated that all of these colonies were under considerable threat from human disturbance (See appendix). A comparison of the 1976 breeding atlas with the latest figures (1984 - 1986) shows that these conclusions were correct. The fact that the earlier survey showed little decrease in numbers of pairs between 1976-1984 has been questioned by many. It is felt that the 1976 figures were an under-estimation of the true figure. What is clear though, is the fact that there has been a drastic reduction in the numbers of colonies. It is commonly acknowledged that prior to a crash in numbers this species will desert the more unfavourable smaller colonies and join up with others to make larger and fewer colonies. So, it is possible to have much the same population of birds but fewer nesting sites. As the population increases the reverse is true.

Table I Estimated number of pairs of little terns nesting at colonies on the east coast of Ireland. (1984 data from Whilde 1984)

	<i>REVISED</i>	<u>1984</u>	<u>1986</u>
Boyne Estuary		36	12
Portmarnock	4	15	2
Bull Island	12	8	47
Dublin Port		1	-
Kilcoole	15	30	18
Buckrooney		20	-
Morriscastle		13	-
Cahore Point		-	25
Raven Point		26	1
Rosslare		6	2
Lady's Island Lake		2	-
The Cull		11	-
Rig Burrow		-	20
Total number of pairs	126	<u>168</u>	<u>127</u>
Total number of colonies		<u>11</u>	<u>8</u>

The little tern protection scheme this year was designed to provide 1) Protection at chosen sites along the east and southeast coast. 2) Provide detailed information on such things as human disturbance and predation.

At the outset, it was realised that the scheme would work, only if enough people volunteered their services as wardens. Unfortunately, this did not materialise and the results suffered accordingly as can be seen by the reports on each site. Only seventeen persons were available to look after six colonies, and on average each person spent less than two hours on each visit to the site. In many cases it was only possible to patrol the site one day per week. However the project did indicate where the problems lie, and in many cases how we can rectify them.

2. METHODS

After careful examination of the tern survey (Whilde 1984), six colonies were chosen for protection, mainly for ease of management purposes. Strategy was based on the Guide to Little Tern Conservation (Haddon and Knight 1983). Most of the colonies were fenced on three sides and signs were erected to encourage beach users to avoid the area. (See appendix, Instructions for Volunteers) It was soon realised that demarkation fencing needed to be on four sides to keep people out of sensitive areas. Information leaflets were handed out to the public and several newspapers printed articles to encourage public awareness. The Irish Federation of Sea Anglers were contacted to ensure that their fishing

competitions did not take place near the tern colonies, and full co-operation was forthcoming in this regard.

3. SUMMARY OF RESULTS

Table 2. Recorded breeding success at six little Tern colonies in 1986.

	<u>Pairs nesting</u>	<u>Young hatched</u>	<u>Young fledged</u>
Boyne Estuary, Co. Louth	12	?	2?
Portmarnock, Co. Dublin	2	0	0
Bull Island, Co. Dublin	47	48	39+
Kilcoole, Co. Wicklow	18	21+	15+
Cahore Point, Co. Wexford	25	?	15
Big Burrow, Co. Waterford	20	0	0
TOTAL	<u>124</u>	<u>-</u>	<u>71+</u>

The success at Bull Island can be put down to the fact that 75% of the breeding season was covered by voluntary wardening and approximately 50% more time was spent in wardening each day than at the other colonies.

One encouraging feature of the project was the support received from the public. Most people were happy with the scheme and complied with the request to avoid disturbance. However, it must be said that it only takes one person to intentionally destroy a whole seasons work.

4. RECOMMENDATIONS

Wardens Full time Wardens should be employed at the colonies next year. Voluntary wardens can be used to assist them. It was clear that signs and fences do not work effectively without a warden present. Each warden should carry an I.D. card and have a good knowledge of the Wildlife Act, 1976.

Wardens should stay 'on site' if possible and where necessary 24 hour days in shifts should be worked. Wardens will need to keep careful records. No record sheets at all were received from two colonies this year.

Recording The daily record sheets should still be used but should allow for more information on weather. It was discovered that unfavourable winds with the spring tides did the real damage this year. The nest record should follow the design in Haddon and Knight (1983) rather than our own design on this years' record sheets.

Fences In Britain problems have arisen when avian predators started to use the fence posts around the colony for perching. They were discouraged by fixing a 6" nail in the top of each post. At colonies where foxes are known or suspected of predating nests, the colony should have an electric fence erected before the terns arrive. All demarkation fences should surround the colony on four sides.

Notices It may be necessary to re-word the signs to suit different colonies. This occurred at Bull Island and the new wording worked well.

Human Disturbance The greatest disturbance was caused, for obvious reasons, by persons walking and stopping inside the colony. Egg collecting was suspected at two colonies, walking past only caused a temporary disturbance, and jogging past caused even less. Of course, if there is a continuous stream of walkers or joggers a greater threat occurs.

Dogs Dogs running rampant will cause serious damage either to eggs or young. Wardens will need to ask the public to keep dogs on a lead.

It is hoped that 1987 will see an increase in conservation measures being taken at these colonies and more awareness among IWC members to assist in this important job.

5. REFERENCES

- Haddon & Knight 1983. A Guide to Little Tern Conservation. (RSPB 1983)
Sharrock, J.T.R. 1976 Atlas of Breeding Birds of Britain and Ireland
BTO/IWC
Whilde, A., 1984 All Ireland Tern Survey - unpublished report RSPB/IWC

6. ACKNOWLEDGEMENTS

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for their help as wardens during the breeding season.

Little Terns - Summary.

The first birds were recorded on the 4th. May with a total of 12 birds present. This number increased to a maximum of 40 adults in mid June.

The first eggs were laid by May 31st. and 12 pairs were incubating, until June 10th., when six clutches were washed away by a high tide. By the 20th. of June 20 pairs were incubating, including 6 replacement clutches for the ones lost on the 10th.

On the 20th. June 5 clutches were lost to an unknown predator, at site (A). These eggs would have been close to hatching. During the week of July 6-13; all the remaining clutches disappeared at both sites, just before they were due to hatch. (See Predation) Unfortunately no wardening was done between these dates, so it was impossible to know exactly what happened, and when the possible predation occurred. The voluntary warden suspected a Fox or Stoat. So, from the record sheets it would appear that most pairs had laid replacement clutches, and finally gave up and left the area by July 15th.

Table 3. Numbers of little Terns breeding at Big Burrow, and their success rate 1984 - 1986.

	1984	1985	1986
Maximum number of little Terns	0	12	40
Breeding Pairs	0	5	20
Birds Fledged	0	0	0

Wardening

Almost all of the work was accomplished by the local Co-ordinator; Liam Ryan. On one busy weekend he was assisted by two other wardens. The general public response was quite good despite one serious problem that arose. (See human disturbance)

The period covered by wardening was from May 4th. to July 13th. 1986.

Table 4. Time spent at Big Burrow colony by the warden(s).

	Days at Colony	Total hrs. at Colony	Average hrs. per visit
Possible period of wardening	60		
Actual visits by wardens	31	57.5	1.8

Predation

It appears that all nests were predated on two separate occasions. Haddon & Knight (1983); discovered that foxes often make a habit of egg stealing just before the eggs are due to hatch.

Human Disturbance

Almost all of the people visiting the area were walking, some with dogs. The majority avoided walking into the colony, and those who did, caused no lasting damage.

Illegal removal of beach material from nest site (A) was stopped in early May, before nesting began, and was reported to the County Council. Unfortunately the offender was not stopped entirely, but moved further along the beach to resume his work. However, no serious damage to the nesting site occurred.

Table 5. Possible extent of human disturbance at Big Burrow.

	Total
Number of people visiting colony during watch	233*
Number avoiding disturbance	201
Number causing disturbance	32

*(150 of this total were met on one day)

From the available records it can be projected that approximately 75 persons will use the beach at weekends and from 5 - 10 persons on weekdays.

Flooding

This proved to be a problem on two occasions. As noted already (6) clutches were lost when a spring tide (not the highest during the period) was backed by a gale force wind, causing the sea to break over the sand spit. On another occasion the warden was able to save all of the nests by digging trenches 300mm. deep around the nests to take the water away. All of the birds continued to incubate. It became clear that flooding would only occur at this site if a high wind coincided with the spring tide, nest site (A) was safe at all times.

Other Threats

On July 13th. evidence of horse riding through the colony was found. This was the only instance recorded.

Conclusion

Strategically this colony is of great importance as it is now the only colony on the south coast of Ireland. The nearest colony in a westerly direction is on the Dingle Peninsula some 300 miles along the coast. There has been a marked contraction of little Terns in an easterly direction in recent years (Sharrock 1976) if this survey is compared with results given by Whilde (1984). The successful conservation of this colony at Big Burrow may aid in re-populating the many suitable habitats in Co. Waterford and also reduce the decline in Co. Wexford. This colony has the following advantages;

1. Relatively little human disturbance, especially on weekdays.
2. Safety from flooding on site. (A).
3. The owner of the site is favourably disposed to our work and might possibly enter a management agreement with the IWC. (It is interesting to note that the dunes are of considerable botanical value too) eg. Bee orchids are present.
4. The voluntary warden lives only a few minutes walk away from the colony, and could provide invaluable assistance in any future scheme.

As far as predation is concerned, it will be vital to identify the species and take appropriate action. The erection of electric fencing next year would certainly be worth considering.

It was almost impossible for one warden to work effectively this year and future success will mean increasing the warden presence next year.

7(2) RAVEN POINT/CAHORE POINT, Co. WEXFORD.Physical Location and Habitat

The traditional nesting site at Raven Point is located at the southern tip of a sand dune complex on the northern side of Wexford harbour. The geomorphology is affected by a combination of tide, wind and winter storms, causing drastic changes from year to year. The main dune complex has been planted with conifers which are now reaching maturity. This wood is known to hold large numbers of foxes.

The main substrate consists of fine sand and broken shells. The little Terns seem to favour an area covered with these shells. This site is very low lying and is subject to flooding at spring tides.

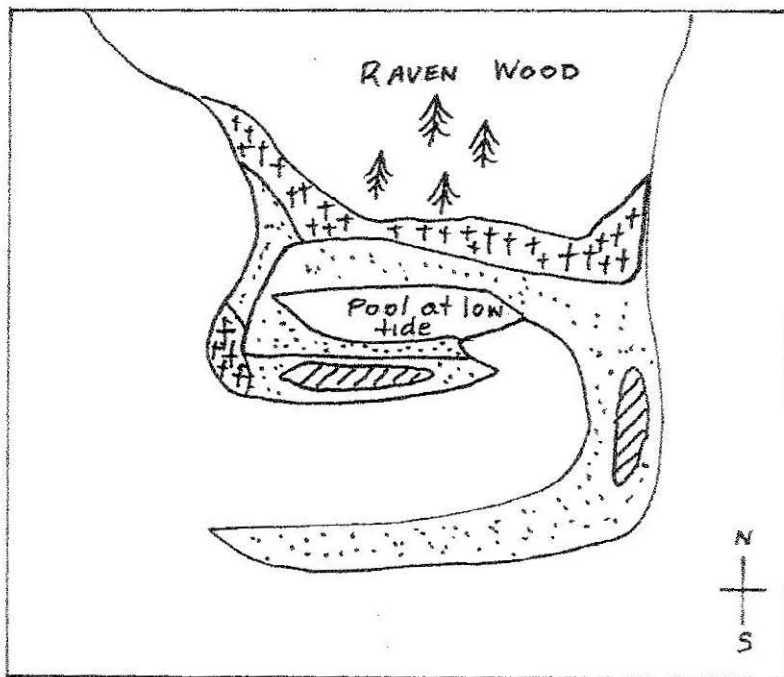


Fig.2.

Little Tern nesting site at Raven Point, Co. Wexford.

Beach :::::
 Sand Dunes +++++
 Nesting Location 1985 /////

Scale; 200 mts.

Little Terns Summary

Raven Point is a statutory nature reserve and has been a regular nesting site for little terns for many years. However, successful breeding has been extremely sporadic, with most years producing few fledged birds. In 1985 the little Terns moved out to the Forth bank, an Island nearby, to attempt breeding. It is thought that the presence of foxes in Raven wood has been responsible for the lack of breeding success. Other disturbances include walking, jogging and the driving of motor vehicles along the beach from Curraclloe holiday Caravan site. In 1986 only one pair of little terns attempted to breed and it would appear that the remainder of the colony moved 18 miles up the coast to Cahore Point. The new site at Cahore Point is situated on a steeply shelving beach made up of fine sand and a scattering of larger stones up to 150mm. in

diameter. On June 27th. the site was visited and (4) birds were recorded incubating with a total of (30) adults roosting along the waters edge. Some of the birds were indulging in courtship displays. This information was added to at a later date when, with a further report, that on June 6th. (25) pairs were incubating and later produced (15) fledged young. In the absence of more specific information it is impossible to draw any conclusions regarding this colony as to human disturbance, flooding or predation. If conservation methods are to be successful it is vital for wardens to fill in the record sheets and spend as much time as possible 'on site'. This year only (4) signs had been erected and no fences were in position at this new site.

Table 6. A comparison of little terns breeding at Raven Point and Cahore Point, Co. Wexford.

	<u>Raven Point</u>		<u>Cahore Point</u>	
	Pairs nesting	Fledged Young	Pairs nesting	Fledged Young
1984	26	0	0	0
1985	22	0	0	0
1986	1	0	25	15

Conclusion

It is difficult to arrive at sound conclusions in the absence of more detailed information, but both sites provide excellent habitats for the little terns if they can be managed correctly.

It is clear that the Raven Point colony may have had major problems with predation and to a lesser degree, human disturbance. Therefore, the use of electric fences is vital at this site in future years. It will be necessary to erect the fence before the terns arrive, so as to minimize disturbance, and also provide an increased warden presence to monitor the situation.

At Cahore Point the colony needs to be fenced off on all four sides and patrolled regularly by wardens. In many respects it would be safer for the birds to move back to Raven Point, within the confines of the nature reserve where they can be given more attention. Cahore Point is only $\frac{1}{2}$ mile from a large caravan site and during good weather the beach can become very crowded.

KILCOOLE, Co. WICKLOW.

7(3).

Physical Location and Habitat

This colony is located on a steeply shelving beach at the entrance to a saltmarsh which fills at high tide through a gap named 'The breaches'. The main Dublin to Wexford railway line runs parallel to the nesting area only a few feet away from the incubating birds. The substrate consists of fine shingle with larger pebbles and stones. The terns always nest in the pockets of finer shingle. Access to the area is made by walking along the beach from both ends, either from Kilcoole Station or the railway crossing further south.

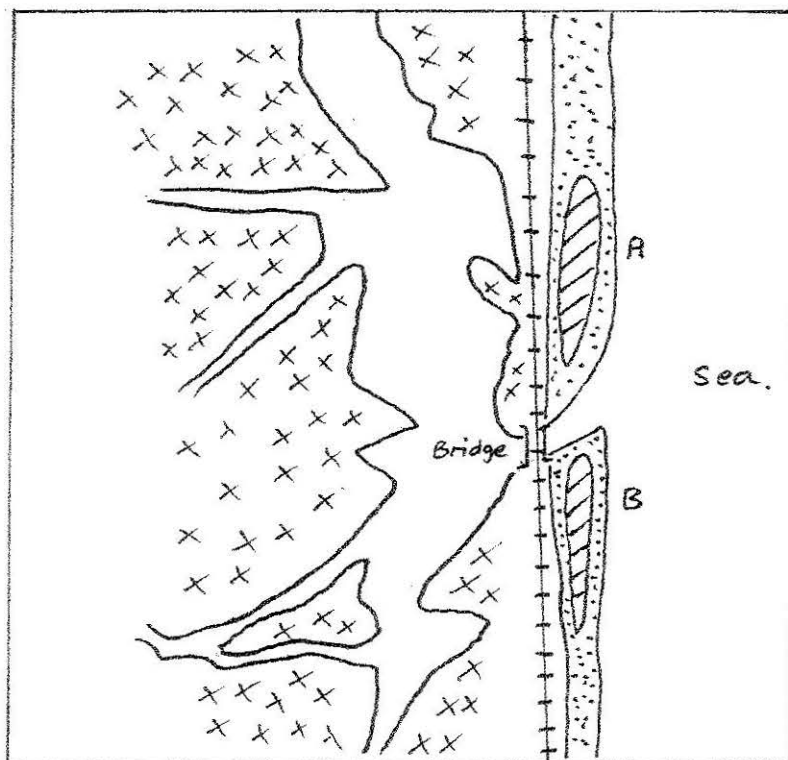


Fig. 3.
Little Tern nesting site at Kilcoole, Co. Wicklow.

Saltmarsh XXXX
 Shingle Beach :::::
 Railway Line -|-|-|-
 Nesting Location //

Scale; 100mts.

Little Terns, Summary

The first birds seen were on April 27th. when two were observed feeding off the breaches. By June 2nd. an average of (30) adults were present, while on June 26th. the number reached (65). The first eggs were laid on May 25th. and most pairs had attempted nesting by mid-June. The colony was split between the north (A) and the south (B) of the bridge with colony (B) producing all of the fledged birds.

In the absence of record sheets it was difficult to assess exactly what happened to individual pairs, but it appears that all pairs except one had to replace lost clutches for various reasons. The most successful birds laid at the beginning of July, producing a good number of young that eventually fledged by late August.

Table 7. Number of Little Terns breeding at Kilcoole, 1984-1986.

	1984	1985	1986
Maximum number of Little Tern present	100+	28	65
Breeding Pairs	15 50*	14	18
Young Hatched	?	?	21
Young Fledged	?	12	15+

*This number was originally (30) pairs. ¹⁵ (20) pairs from a nearby site joined the colony when their first nesting attempts failed. *corrected 1991*

Wardening

Wardening was carried out by at least four people at various times throughout the period May 1st. to August 17th., 1986. Unfortunately no record sheets were returned, so it is not possible to give any information regarding time spent at the site by wardens.

Human Disturbance

In the absence of record sheets no figures can be given, but it is thought that egg collectors were at work on one occasion and could have accounted for at least six clutches of little tern eggs and nine clutches of oystercatchers eggs. On June 26th. I spoke to a man living nearby and he stated that he was aware of egg collecting this year, and in past years, by youths from a nearby village. It is interesting to note that this beach is one of the only nesting sites for oystercatchers on the east coast.

Predation

Predators seen include a fox (Killed by a train) Stoat, Hooded Crow, Merlin, Kestrel and Peregrine Falcon. In August both Hooded Crow and Peregrine were seen to take young from the beach. During the breeding season the local Wildlife Ranger (FWS) had been effective in controlling the numbers of hooded crows, and this has no doubt helped the terns.

Flooding

Flooding is an occasional problem at this site and (5) pairs lost clutches in early June when a southeast gale backed up a spring tide, covering the eggs. Under normal circumstances this site is reasonably safe as the wind normally blows offshore most of the time.

Conclusion

The tern colony is well situated, in that it is a long way off the beaten track for walkers. The beach is not the most suitable for sun bathing and swimming, so, it does not attract large numbers of people. The railway line and saltmarsh provide a barrier on the western edge of the colony. Little terns have nested with moderate success over the last few years and if given suitable protection this site could supply more birds for other colonies. The Oystercatchers would benefit too. The main problem seems to be egg collecting and possibly predation. The area has been shown to contain plenty of predators of various species and more observations need to be made in this respect. This problem and the annual egg collecting can be solved by using a full time warden and installing electric fencing next year.

BULL ISLAND, Co. DUBLIN.Physical Location and Habitat

Bull Island is situated at the northern end of Dublin Bay and joined to the mainland by a road and causeway. It was formed when the Bull Wall was built some 200 years ago. The gradual build up of sand has now become a dune complex (4) miles in length. The little Tern colony is located at the northern tip of the Island in most years, although it would appear that there is some interchange between this site and Portmarnock. The substrate consists of a mixture of fine sand and shells and the terns prefer to nest among the shells. In 1986 the nesting area was no more than 110 metres by 80 metres in extent. The geomorphological recurve is constantly changing from year to year, and the nesting area can be reduced or widened with obvious implications to the terns.

It is possible to observe the little terns at this site by sitting on top of the sand dunes some (3) metres above the colony, and it is possible to get within (30) metres of sitting birds without disturbing them. There is no doubt that they have become used to a certain amount of human disturbance.

The Island itself is designated as a nature reserve, and managed by the Dublin Corporation Parks Department. However, the conservation of breeding birds needs to be developed to a greater degree. Two full time wardens are employed by the Corporation, but these are mainly concerned with security rather than conservation. This year saw the opening of an Interpretive Centre on the Island, and this building provides ecological information about the reserve, with an emphasis on wintering birds. It would be in the interest of the little Terns for the Centre to include a display about breeding birds such as these. This could be complemented by building a 'hide' overlooking the colony and arranging supervised trips for the public, with a full time warden.

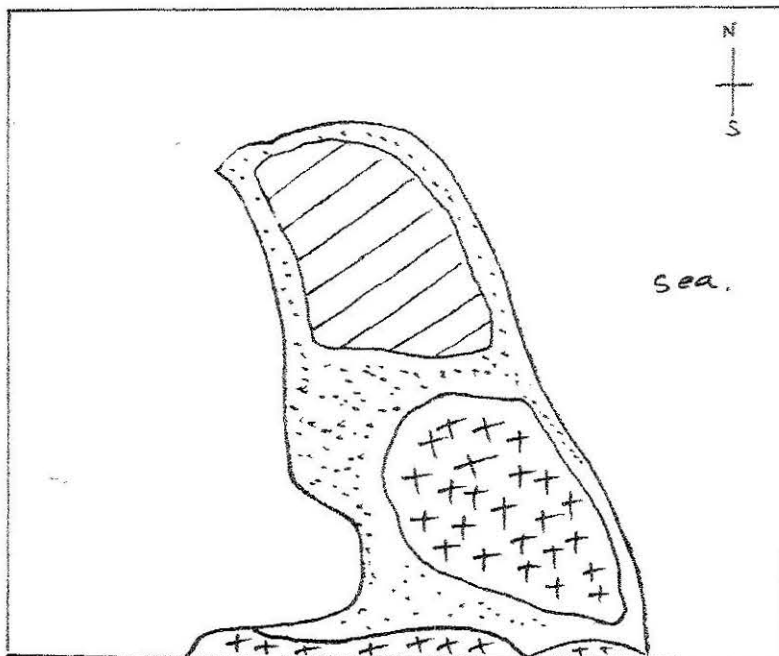


Fig. 4.

Little Tern nesting site at Bull Island, Co. Dublin.

Sand and Shells :::::
 Sand Dunes +++++
 Nesting Location ///////

Scale; 100 metres

Little Terns Summary

This year Bull Island held approximately 20% of the total pairs in the whole country. This is a marked increase compared with previous years and illustrates the value of this scheme. It was obvious that this protected site attracted other little terns that could not successfully breed at other locations eg; Portmarnock. It is quite possible that the 'missing' terns from the Boyne Estuary could have bred at Bull Island this year.

Table 8. Number of pairs of Little terns nesting at four colonies in Dublin and Louth 1984 - 1986.

<u>Site</u>	<u>1984</u>	<u>1986</u>
Boyne Estuary	36	12
Portmarnock	154	82
Bull Island	128	47
Dublin Port	1	0
Total:	60	59

Little Terns were first recorded at Bull Island on April 27th. but it was not until May 20th. that the first eggs were laid. The numbers incubating increased to a maximum of (47) pairs on July 8th. On July 12th. the highest ever number of adults, (127) were present in the vicinity of the colony.

On the whole, the scheme proved that the Terns could recognise a protected area and colonize it quickly. There is good reason to believe that next year will provide as many, if not more pairs.

Table 9. Nesting pairs of Little Terns at Bull Island, Co. Dublin 1984 - 1986.

	<u>1986</u>	<u>1985</u>	<u>1984</u>
Nesting Pairs	47	26	8
Total nesting attempts	61	-	-
Successful nests	29+	19	-
Total Young Hatched	48	39+	19+
Total Young Fledged	39+	42+	?

Wardening.

The period of protection ran from April 27th. to July 15th. and was accomplished by (3) wardens. On the whole, they reported a good public response with only a few persons objecting to the request; not to enter the sensitive nesting area. More visits and more time per visit were spent at this colony than any of the others, and there is no doubt the good results reflect this.

Table 10. Actual time spent in wardening at Bull Island.

	<u>Days</u>	<u>Hours</u>	<u>Average hours per day</u>
Possible period of wardening	79	-	-
Actual warden visits	59	211	3.5

Human Disturbance

The records showed without doubt that human disturbance was the single greatest factor affecting breeding success at this site. It was encouraging to see the majority of people complying with the request not to disturb the birds. However, one serious intrusion on July 11th. led to the disappearance of (18) clutches of eggs. Evidence of dogs, horses, and human footprints in the nesting area along with motor cycle tracks was discovered the day after. Had a full time warden been on duty this would not have occurred. It was quite possible that the eggs were stolen on this occasion by the intruders, rather than predators, as there was no evidence of any young missing when the intrusion was discovered.

Table II. Numbers of people visiting colony, and their response to signs.

	<u>Total</u>
Persons visiting colony	1,223
during watch	<u>1,167</u>
Number avoiding disturbance	<u>1,167</u>
Number causing disturbance	56 (4.5%)
Number turning back of their	<u>220 (17.9%)</u>
own accord at signs	

Table II. Activities of visitors to the colony.

	<u>Total</u>
Walking	<u>970</u>
Jogging	<u>132</u>
Birdwatching	<u>68</u>
Boating	<u>20</u>
Cycling	<u>11</u>
Others	<u>22</u>

Other activities included shell collecting, photography, driving cars, scrambling, swimming and fishing.

The activity least inclined to cause disturbance was jogging. The joggers would keep to the outside of the colony, on hard sand and would only disturb the birds momentarily. Persons walking outside the nesting area, but close enough to disturb the birds were only a threat if they stopped for any length of time.

A projection of numbers from the record sheets indicates a possible 60 - 70 persons per day. In very good weather this would no doubt be greater.

Table I3. Showing total number of predatory species observed at the little tern colony on Bull Island.

Hooded Crow	<u>57</u>
Kestrel	<u>9</u>
Raven	<u>6</u>
Peregrine	<u>2</u>
Sparrowhawk	<u>1</u>
Lg. Gull Spp.	<u>25+ each day</u>

Two cases of Avian predation were recorded. A herring gull and a Kestrel were observed taking young from the colony. It is worth noting that while predatory species accounted for 8% of the disturbance factor, human disturbance accounted for 92%.

Flooding

The sand spit is subject to periodic flooding, as it is rather low lying. Eight pairs lost eggs due to flooding this year, when strong winds backed up the spring tide in late May.

Conclusion.

The records indicate that this colony is now the largest, and the most threatened from human disturbance, in the country. On the other hand the time spent in protecting the birds reaped excellent results. The benefits were as follows;

- 1) Large numbers of people were kept away from the colony by increased warden presence.
- 2) More information on the various threats, such as predation was available.
- 3) More birds than ever were able to fledge.

However, as the threats are potentially greater, even more time needs to be spent at the site, to avoid more isolated cases of intentional dis-

-turbance such as the one recorded on July 11th. It would be tragic to see a whole seasons work undone by a single intrusion such as this one. Although the two Corporation Wardens agreed to help, in practice they did very little. The continuing success of this tern colony depends largely on an increased warden presence by the I.W.C. The following suggestions could be put into practice with good results;

- 1) At least two full time wardens * plus Voluntary wardens working on site until dusk. The need for more warden presence is seen by the fact that only 17.9% of the visitors turned back of their own accord at the signs.
- 2) Fence off the colony completely to stop cars or motor cycles driving in.
- 3) Provide a 'hide' for the wardens and visiting members of the public.
- 4) Provide Caravan or Tent accommodation on site for wardens.
- 5) Provide, in conjunction with Interpretive Centre, more information on the little terns, such as aspects of the 1976 Wildlife Act.
- 6) Change the wording on the signs so it is clear where the birds are nesting. (Many people were confused this year and thought it was better to keep to the beach, and avoid the dunes, when in fact the opposite was true.
- 7) Consider raising the height of the sand spit by using 'Searle wave Screens'.

(*) Tom Cooney, the local I.W.C. Co-ordinator works for the Dublin Parks department. Efforts should be made to get the Corporation to transfer him to the job of little Tern warden on Bull Island for the duration of the nesting period each year.

7(5)

Physical Location and Habitat

The Little Tern colony is situated on a recently formed recurve, at the southern tip of Portmarnock sand dunes, at the mouth of the Baldoyle Estuary.

The Substrates consist of a mixture of fine sand, small stones and shells. The area is low lying, but reasonably safe from flooding, owing to its sheltered position.

The main dune complex houses the Portmarnock Golf Course, and the whole area, including the Estuary has been designated as an area of Scientific Interest (ASI)

During International Golf tournaments thousands of people have access to the sensitive nesting area, and have had, no doubt, a great bearing on the breeding success of the little tern colony in past years.

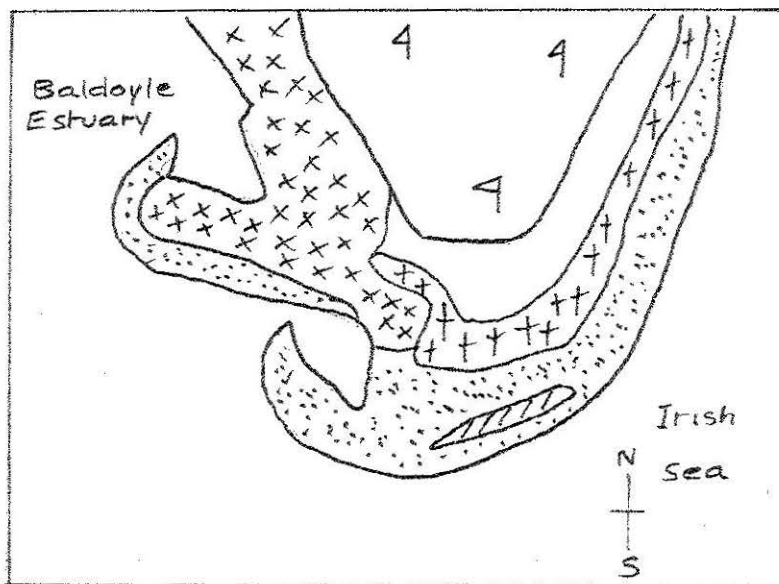


Fig. 5.

Little Tern nesting site at Portmarnock sand dunes, Co. Dublin.

Sand and Shell Beach :::::
 Golf Course 4
 Sand Dunes +++++
 Saltmarsh xxxxx
 Nesting Location /////

Scale; 100 metres.

Little Terns - Summary

Little Terns have used this site somewhat sporadically in recent years. In most years they have had little success. There appears to be an interchange of birds between Bull Island and Portmarnock, and the size of the colony varies accordingly.

In 1986 only two pairs actually laid eggs, yet according to observations at least (15) pairs were trying to settle in the area. The first birds arrived at the site on May 11th. with a maximum of (54) adults present later in the month. Two pairs laid eggs by May 27th., and others were seen in various stages of courtship behaviour including copulation. These two clutches disappeared within one week, and all the Little Terns deserted the area soon after. No more clutches were laid. The cause of failure is unknown, but predation was suspected. It seems certain that

these birds left to breed at Bull Island, only two miles away. (See Bull Island report).

Table I4. Nesting pairs of Little Terns at Portmarnock 1984 - 1986.

	1984	1985	1986
Maximum number of Adults present	30+	0	54*
Number of pairs breeding	154	0	2
Young Fledged	0	0	0

(*) This figure was recorded when (50) were present at Bull Island on the same day.

Wardening

The period covered by wardening was between, May 11th. and July 20th. When it was realized that the birds were not going to breed, visits to the colony were few and far between. The majority of wardening was carried out by the local co-ordinator and his son.

Table I5. Showing time spent at the colony by wardens.

	Days	Total Hours at colony	Average Hours per day
Possible period of wardening	70	-	-
Actual Visits by Warden	10	18.5	1.8

Human Disturbance.

Anyone entering the area must walk approximately two miles along the beach from Portmarnock Village as access to the area is forbidden through the Golf course. Most visitors were engaged in Walking, Jogging and occasional fishing. A more serious threat was the exercising of race horses along the sensitive areas of beach almost every day. The horses gallop at high speed through the nest site with disastrous effect on the birds, this regular disturbance would no doubt discourage the terns from settling down to breed. It will be necessary to contact the persons involved and encourage them to co-operate with the protection scheme.

Table I6. Possible extent of Human Disturbance at Portmarnock, Co. Dublin.

* Number of People visiting colony during watch	<u>27</u>
Number avoiding disturbance	<u>24</u>
Number Causing disturbance	<u>3</u>

(*) It has been estimated that the number of people visiting the area would be in the region of 15 - 20 per day.

Predation

The predator thought responsible for the loss of the two clutches is unknown. However, large numbers of Hooded Crows and Magpies are present in the area

Flooding

No flooding occurred at this site during the spring tides this year.

Conclusion

Despite the lack of breeding success this year, this site could be of great importance in the future if an effective Conservation Programme is carried out along the east coast, resulting in consistent breeding success. For example, If the Bull Island colony gets any larger the lack of nesting space will mean that some birds will look for another site. The most obvious one is Portmarnock, which is very suitable, if the threats already mentioned are dealt with. So, although there has been no success at this site for the past two years, it will be important to provide disturbance free nesting areas before the birds colonize again. It will therefore, be necessary to fence off the area and keep human disturbance to a minimum.

The serious problem of horse riding needs to be tackled so that the birds can settle in early May. In the meantime other birds such as the ringed Plover will greatly benefit. During May 1986, a report containing management proposals was sent to the Golf Club at their request, and if implemented would assist in protecting this important (ASI). A copy is included in the Appendix. So far, nothing concrete has developed from this initiative, so it would be well worth another approach.

BALTRAY, BOYNE ESTUARY, CO. LOUTH.Physical Location and Habitat

The nesting site is situated at the Baltray side of the Boyne Estuary on the end of a sand dune complex. To stop the mouth of the Estuary silting up, a wall has been built at right angles to the dunes (See Fig 6) This resulted in the build up of a sand bar behind the wall, that is growing in a northerly direction.

At site (A) the substrates consist of fine sand and shells with patches of coarser material in certain areas. The sand bar (B) is made up mainly of shells, fine sand and stones up to 75mm. in diameter. The dune complex is owned by an I.W.C. member living in Dublin, who has shown considerable interest in the conservation of the area.

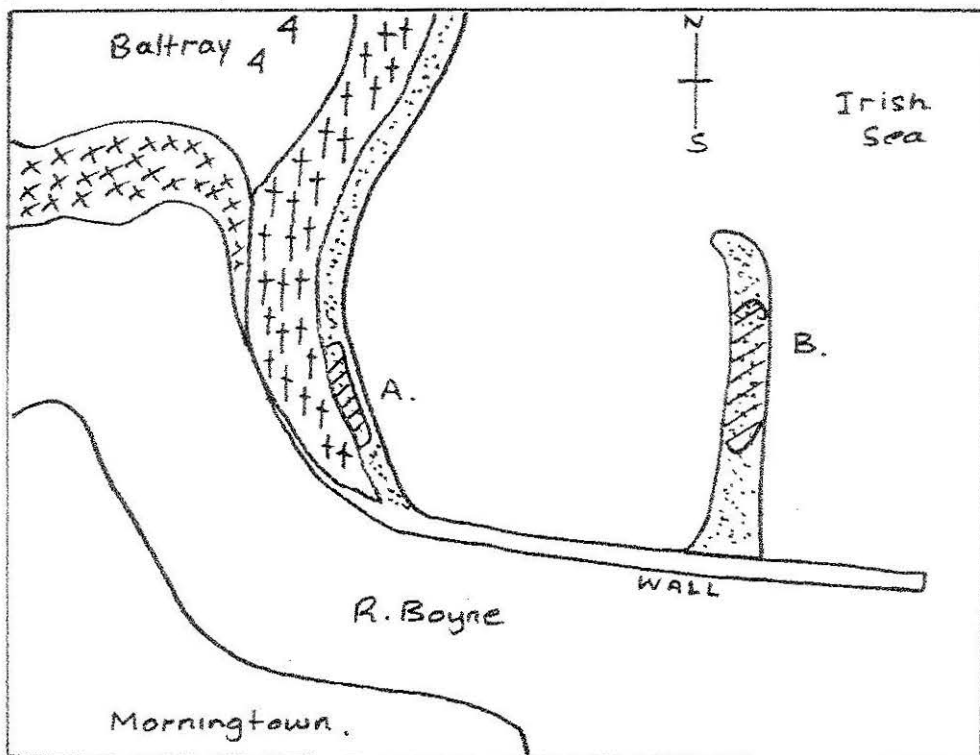


Fig 7.
Little Tern nesting site at Baltray, Co. Louth.

Sand and Shell Beach
Saltmarsh	xxxxx xxx
Sand Dunes	++++ +++
Golf Course	4
Nesting Location	//////

Scale ; 100 metres.

Little Terns - Summary

The first Terns were recorded on May 3rd. and numbers remained very low until May 28th. when (32) arrived. Most birds started to incubate between June 10th. and 15th. but were difficult to spot without causing a disturbance, due to the distance involved, from the nearest cover. A walk along the sand bar on June 11th. indicated that (12) pairs were incubating. All nesting pairs bred on this sand bar in 1986. An examination of the beach at site (A) found it had been colonized by Sea Beet, (*Beta Vulgaris*) to such an extent that it would discourage

nesting pairs. This perhaps, is not a bad development, as this site is prone to excessive human disturbance. An examination of this site on June 11th. showed evidence of dogs, human activity and motor cycling. The several pairs of ringed plovers, noted at the end of April, had all deserted this area, no doubt due to these disturbances. The overall breeding success was difficult to establish. It appears from the records that only one pair succeeded in raising any young, and judging by the late date involved, was the product of a replacement clutch. No other details were available.

Table 17. Nesting pairs of Little Terns breeding at the Boyne Estuary, 1984 - 1986.

	(B) only	(A) & (B)	(A) & (B)
	1986	1985	1984
Maximum Adults Present	30	44+	80
Number of Pairs Breeding	12	22	36
Young Fledged	2	unknown	unknown

Wardening

A total of five persons helped with the work, but the time spent was very limited indeed. The period covered was May 3rd. to August 2nd.

Table 18. Time spent by wardens at Baltray, Co. Louth.

	Total	Total Hours	Average Hours
Possible Period of Wardening	91	2	-
Actual Visits by Wardens	19	42	2.2

Human Disturbance

It would appear from the record sheets that human disturbance is not a major problem at site (B). However, as already noted this was not the case at site (A). Most of the people approached were sympathetic to the project and avoided disturbance. Most persons were engaged in Walking, some with dogs.

Table 19. Possible Extent of Human Disturbance at Baltray, Co. Louth.

	Total
Number of People visiting during watch	71
Number avoiding disturbance	69
Number Causing disturbance	2

Projected figures indicate (15) to (20) persons visiting the area per day, although very few walk as far as the colony.

Predation

Predators at the colony included Large Gull Spp., Kestrel, Merlin, and Hooded Crow, the latter in large numbers. The wardens believed that the Hooded Crows could be responsible for this years failure, although no hard evidence exists for this conclusion. It is clear that more research needs to be accomplished in this respect, to give an answer as to why this colony failed.

Flooding

This colony was not flooded at all between May and August 1986.

Conclusion

This colony has great potential for development with the correct Management. The owner of the adjacent land is an I.W.C. member and it may be worth approaching her with a management plan for the future conservation of the area.

The colony is the most northerly on the east coast, the next Little Terns are approximately 300 miles away on the Donegal coast. The nearest colony south of the Boyne is situated at Bull Island, Co, Dublin, 30 miles away. It is therefore, vital to protect this site and try to build up numbers to a respectable level again. Encouraging aspects include the small numbers of visitors to colony (B) and the fact that the sand bar is surrounded on three sides by water at high tide. This should make the site easier to manage.

APPENDIX

IRISH WILDBIRD CONSERVANCY

LITTLE TERN PROTECTION SCHEME 1986

Instructions for Volunteers

1. Objects

The objects of this scheme are a) to provide protection from disturbance at a number of little tern colonies on the east and S.E. coasts of Ireland; b) to monitor all nesting attempts and causes of failure if known; c) to gather baseline data on each colony for future use in management decisions.

2. Methods

Apart from natural hazards such as flooding and predation, human disturbance is the main threat to breeding little terns. Explanatory signs and fencing will be erected at a number of vulnerable colonies in an effort to reduce human disturbance. Volunteer wardens are asked to watch the colonies especially at weekends and holiday periods and to explain the reason for the protection scheme to members of the public. Wardens are also asked to monitor nesting attempts and to complete the daily record forms. Little terns are extremely vulnerable to human disturbance and are liable to shift sites if unduly disturbed. If left without disturbance they are faithful to a chosen site year after year. As this is the case, emphasis will be on protecting the site rather than researching the birds themselves.

3. Signs

Card signs on plywood will be provided by the IWC and these will be erected on posts along the fence perimeter at strategic places to discourage the public from entering the area. Replacement signs and boards will be provided in case of loss. The sign contains the words - GROUND NESTING BIRDS PLEASE DO NOT ENTER. At the end of the nesting period signs will need to be removed and stored for future use.

4. Fencing

Fencing will consist of timber posts at 15ft. intervals with a single strand of nylon wire. Wardens will need to patrol the perimeter paying particular attention to main access points and where the fence crosses the main beach. The fence will need to be checked for damage and repaired if necessary. The fence will need to be positioned at least 100 yards from the nearest nests. It may be that some sites will be warded just at weekends so damage could occur during the week. If at all possible a mid-week check will be helpful; this could be accomplished on an evening visit. At the end of the nesting period fence posts and wire will need to be removed and stored.

5. Wardening

a) This will commence soon after the fences and signs are erected and continue into early July. It is important that their chosen nesting site will be free of disturbance at the vital period when the birds pair up and prepare for breeding during early May. By counting adults present at this time an early indication of colony size will be discovered. Priority periods will be at weekends and public holidays. This year 2 June will be a bank holiday Monday.

As many little terns nest close to the high water mark a special effort will be needed to monitor the effects of possible flooding by Spring tides. Higher than normal tides are expected on 22-24 May and 21-23 June 1986.

b) Explanatory Leaflet

Leaflets will be provided to give to members of the public at the site. This will help them see the importance of our project and encourage them to become conservation conscious. It is very important that wardens use a diplomatic approach to those they meet. Only one little tern nesting site (Raven Point, Wexford) is within a nature reserve. As we do not own the other sites we cannot force members of the public to keep out. However, they are breaking the law if they destroy eggs or chicks by walking on them. Our object is to win support, not alienate people.

c) Avoidance of Disturbance by Wardens

As the eggs of little terns are so hard to see and they usually nest 20-30ft. apart excessive disturbance can be a problem if wardens approach individual nests to record their data. It has been decided that all recording will be accomplished at a distance by telescope or binoculars. The emphasis will be on protecting the nesting site and keeping the birds undisturbed rather than collecting data on clutch size, etc. A vantage point needs to be chosen so sitting birds can be counted without undue disturbance to the colony.

d) Hides

It may be necessary at some sites to erect a hide to accomplish the procedure under note c). This will be decided when the colonies are first visited by the co-ordinator.

6. Recording

a) Daily record sheets should be filled out by the wardens. One copy will be needed for each day or part of day spent at the site. These should be returned to the co-ordinator by 15 August at the latest. All records will be kept by the IWC having been processed for future conservation plans.

b) Human disturbance give details of how many persons needed to be turned back from the colony and record what activity they were engaged in. Please note the time of day.

c) Species - Basic information

1. Dates of arrival and departure of little terns.
2. Number of breeding pairs present.
3. Number of nesting attempts - plot on map.
4. Note the date incubation started.
5. Number of young fledged.
6. Number of associated breeding species near to colony.
(ringed plover, oystercatcher). The success or failure of these.
Give reasons for failure if known.

d) Natural Disturbance Flooding may occur at spring tides. Please note time of high tide and how many nests were destroyed. On sandy sites eggs and chicks can be buried by wind blown sand. If you believe that this happened please note in your comments.

e) Predators Note type of predator, the time predation occurred. Did they take eggs, young or adults? Evidence such as tracks can be noted to identify unseen predators. If eaten eggs are discovered please keep the shells for examination.

f) Map of Colony An outline map (scale 25" to 1 mile) will be provided to plot the nests as soon as the birds are seen incubating. They should be marked with an X in their exact positions as they appear on the beach in relation to the average high tide mark. The nests will then be given a number on the daily record sheet. The individual progress of each nest can then be monitored.

g) Recording of Clutch and Brood

As noted already it is not recommended that clutch size should be checked. From the daily records it will be possible to have a good idea when the eggs hatch and then observe how many chicks are present, using binoculars. Little tern chicks stay in the nest scrape for three or four days so it will be possible to record brood size in many cases (see breeding biology notes).

h) Fledged Birds Once the nesting season ends it may be possible to count the number of successfully fledged birds by counting at the tern roosting sites. Most colonies will roost together for a while before moving along the coast and eventually leaving our shores. Please look out for their roosting sites and count the juveniles and adults. List them separately.

7. Equipment check list

1. Large scale maps
2. Daily record sheets
3. Pens and pencils
4. Notebook
5. Binoculars/telescope
6. Waterproof clothing
7. Tent or caravan for shelter if possible.
8. Local tide tables
9. List of useful addresses and telephone numbers. eg., Garda, wardens, co-ordinators, IWC Hq., Forest and Wildlife Ranger.
10. Leaflets
11. Supply of spare signs and nylon wire
12. Wardens time table.

8. Dealing with Awkward People

It is important not to get upset with such people. Remain calm, if they get abusive and walk away if necessary. If you have evidence that they deliberately damaged eggs or chicks they are committing an offence by law. Note everything said and done in your notebook. Note their description and try to get their car registration number. Then contact the local Wildlife Ranger and/or Garda as soon as possible. Hopefully most people can be won over by a friendly approach.

Thank you for your participation in the project. Please return all completed record sheets and maps to the organiser not later than 15 August 1986.

Ian J. Herbert,
Corville Road, Roscrea, Co Tipperary.